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**A New Species of the Gnathiid Isopod Crustacean  
from the Sea off Sanriku, Northern Japan\***

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三陸沖から発見されたウミクワガタ科（甲殻綱，等脚目）の1新種

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岩手県三陸沖から発見されたウミクワガタ（グナチア）を、新種 *Gnathia sanrikuensis* として記載した。本種はアンチル諸島から知られている *Gnathia johanna* Monod, 1926 と最もよく類似するが、(1)大顎の先端が内側に突出しないこと(2)第二触角の鞭数が少ないこと、(3)頭部前側縁が細く突出する、(4)胸脚の内縁の突起が弱いこと、(5)第2胸肢の第2節の先端に長い剛毛がないことで区別される。

During a benthos survey at Otsuchi Bay, Dr. Shin'ichi Ishimaru collected some gnathiid specimens and they were handed over to me for my study for the courtesy of Dr. Shin'ichi Ishimaru, Kanazawa Women's College. At close examination of mine, it proved to be a new species of genus *Gnathia*, Iwate Prefecture, Pacific Side of Northern Japan.

***Gnathia sanrikuensis* n. sp.**

(Jap.name ; Sanriku-umikuwagata, new)

(Figs.1-3)

**Material examined :** 4♂♂ (1♂ holotype, 2.8 mm in body length 3♂♂ paratypes, 2.4~2.7. mm in body length) 42m in depth, Otsuchi Bay, off Otsuchi, Iwate Prefecture, coll. Shin'ichi Ishimaru, Aug. 2, 1993. 1♀ (2.8 mm in body length), 1 zuphea (1.6 mm in body length) 1 praniza (1.6 mm in body length) larva. These female and larva specimens are considered to be the same species, for they were collected from the same habitat, and other gnathiid was not found around there. Holotype (TOYA Cr-12473), 2 male paratype (TOYA Cr-12474~12475), 1female (TOYA Cr-12476), one zuphea specimen (TOYA Cr-12477) and one planiza (TOYA Cr-12478) are deposited at the Toyama science Museum and a male paratype (OMNH Ar-3981) is deposited at the Osaka Museum of Natural History.

**Description of male :** Body slender, 3.6 times as long as wide. Color dull yellow in alcohol. Cephalon 3/4 time as long as wide. Dorsal sulcus lacking. Supraocular lobe present. Para-ocular ornamentation lacking. Pleon almost straight. Pleotelson elongated triangular.

Antennule. (Fig.1F) Peduncle 3-segmented ; each segment rectangular ; flagellum 5 segmented, terminal segment with 3 setae at the tip. Antenna a little longer than antennule. Peduncle 5-segmented. Flagellum 7-segmented, each segment trapezoid.

Mandible (Fig.1B) triangular. Mandibular setae present. Armed carina lacking. Mediofrontal process lacking.

Maxilliped (Fig.1C) 5-segmented; first segment stout without seta ; second segment square with 3 plumose

**Key word :** Astacilla, Conathia, New Spectes, Gnathiidea, Sanriku, Japan

\* Contribution from the Toyama Science Museum No.194

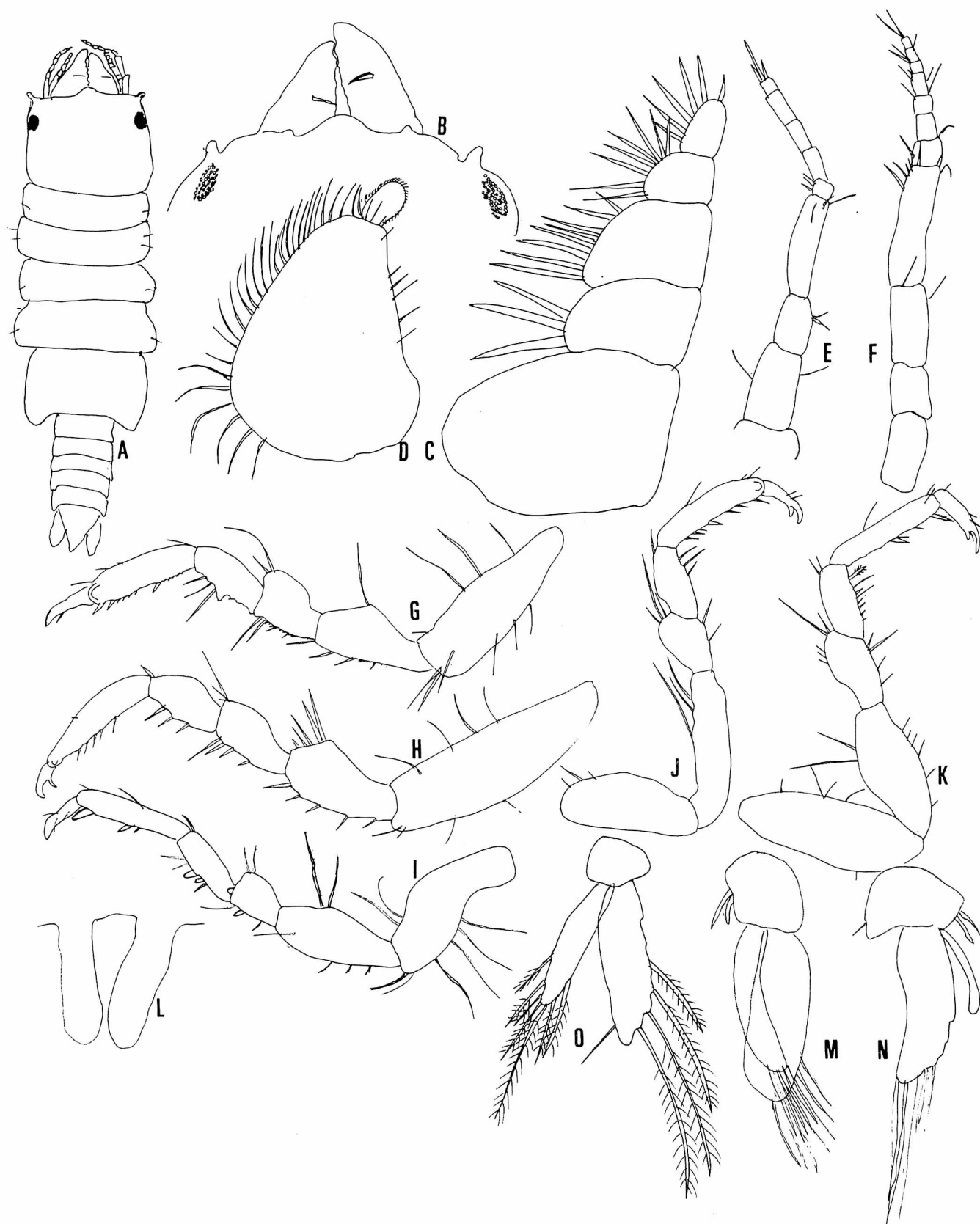


Fig.1 *Gnathia sanrikuensis* n.sp.

A. Dorsal view ; B. Anterior part of cephalon ; C. Maxilliped ; D. Pylopod ; E. Antennule ; F. Antenna ; G-K. Pereopods 1-5 ; L. Penes ; M. Pleopod 1 ; N. Pleopod 2 ; O. Uropod. (All : Holotype male).

setae on inner margin ; third segment square with 7 segments ; fourth segment with 8 setae ; terminal segment small and round with many fine setae around the margin ; terminal segment triangular with 7 plumose setae around the margin.

Pylopod (Fig.1D). Big and 2-segmented ; first segment with about 40 setae ; second segment small and round.

Pereopod 1. (Fig.1G). Basis rectangular, with 3 long setae both margins, 3 long setae near the distal end ; ischium rectangular with a seta at outer sternal margin and 3~4 setae on inner margin ; merus square with 2~3 longer setae and many shorter setae on inner margin and 2 long setae at outer distal corner ; carpus with sinuate inner margin bearing 3 setae ; propodus rectangular with 3 stout setae on inner margin ; dactylus bifid.

Pereopod 2 (Fig.1H). Basis rectangular with 4 setae on outer margin and 4 setae on inner margin ; ischium rectangular with 5 setae on inner margin and 5 setae on outer margin ; merus a little shorter than ischium with 4 setae on inner margin and 3~4 setae at outer distal corner ; carpus with 3 setae on inner margin and a seta at outer distal corner ; propodus long with 5~6 setae on inner margin ; dactylus bifid.

Pereopod 3 (Fig.1I). Basis oblong with 6 long setae on inner margin and 2 long setae on outer margin ; ischium oblong with 4 setae on inner margin and 2 long setae on outer margin ; merus almost square with a seta and protuberance on inner margin and 2 setae at outer distal corner ; carpus rectangular with 3 protuberances on inner margin and 2~3 setae on outer margin ; dactylus bifid.

Pereopod 4 (Fig.1J). Basis rectangular with 3 setae on outer margin ; ischium with 2~3 long setae on outer margin ; merus with 2 setae at inner distal corner and 3 long setae at the outer distal corner ; carpus 3 setae in the distal end of inner margin and a seta at outer distal corner ; propodus rectangular with 2~3 setae ; dactylus bifid.

Pereopod 5 (Fig.1K). Basis elliptical with 4 setae on outer margin ; ischium a little shorter than basis with 2 long setae on outer margin and 5 shorter setae on inner margin ; merus about half the length of basis with 4 setae on inner margin and 3 setae at outer distal corner, one of them is very long ; carpus as long as merus with 5 stout spines, 2~3 setae and an ornamented seta near the distal corner of inner margin ; propodus long, 1.5 times as long as carpus with 2 serrated spines, 2 setae on inner margin and 2~3 long setae on outer margin ; dactylus long.

Penes (Fig.1L) relatively stout.

Pleopod 1 (Fig.1M). Basis round with 2 setae , both rami lanceolate with 8 plumose setae around the margin

Pleopod 2 (Fig.1N). Endopod with a narrow stylus. Other pleopods are almost similar each other.

Uropod (Fig.1O). Endopod lanceolate with 3 long plumose setae ; exopod 3/4 time as long as endopod with 6 long plumose setae.

*Remarks* : The present new species is most closely allied to *Gnathia johanna* Monod, 1926, which was reported from the Antilles. But the former is separated from the latter in the following features : (1) less protruded apical area of mandible, (2) less numerous flagellum of antenna, (3) presence of protuberances on antero-lateral margin, (4) weaker protuberance of inner margins of pereopods, (5) absence on long seta on the second segment of pylopod.

*Description of female collected together with holotype male* : Body 2.2 times as long as wide, widest at pereonite 3-4. Color dull yellow in alcohol. Pleotelson triangular.

Antennule (Fig.2B) Peduncle 3-segmented ; first segment 3 setae at distal end ; second segment with 4-5 setae on distal margin ; third segment oblong. Flagellum 4-segmented. Antenna (Fig.2C), a little longer than antennule, flagellum 6-segmented.

Pereopod 1 (Fig.2D). Basis ; rectangular ; ischium rectangular with 2 long setae on outer margin ; merus square with protuberances on inner margin ; carpus square with protuberances on inner margin, propodus long with 5 stout setae on inner margin and a seta at outer distal corner ; dactylus rather long.

Pereopod 2 (Fig.2E). Basis rectangular with 3 relatively long setae on outer margin ; ischium with 2 setae

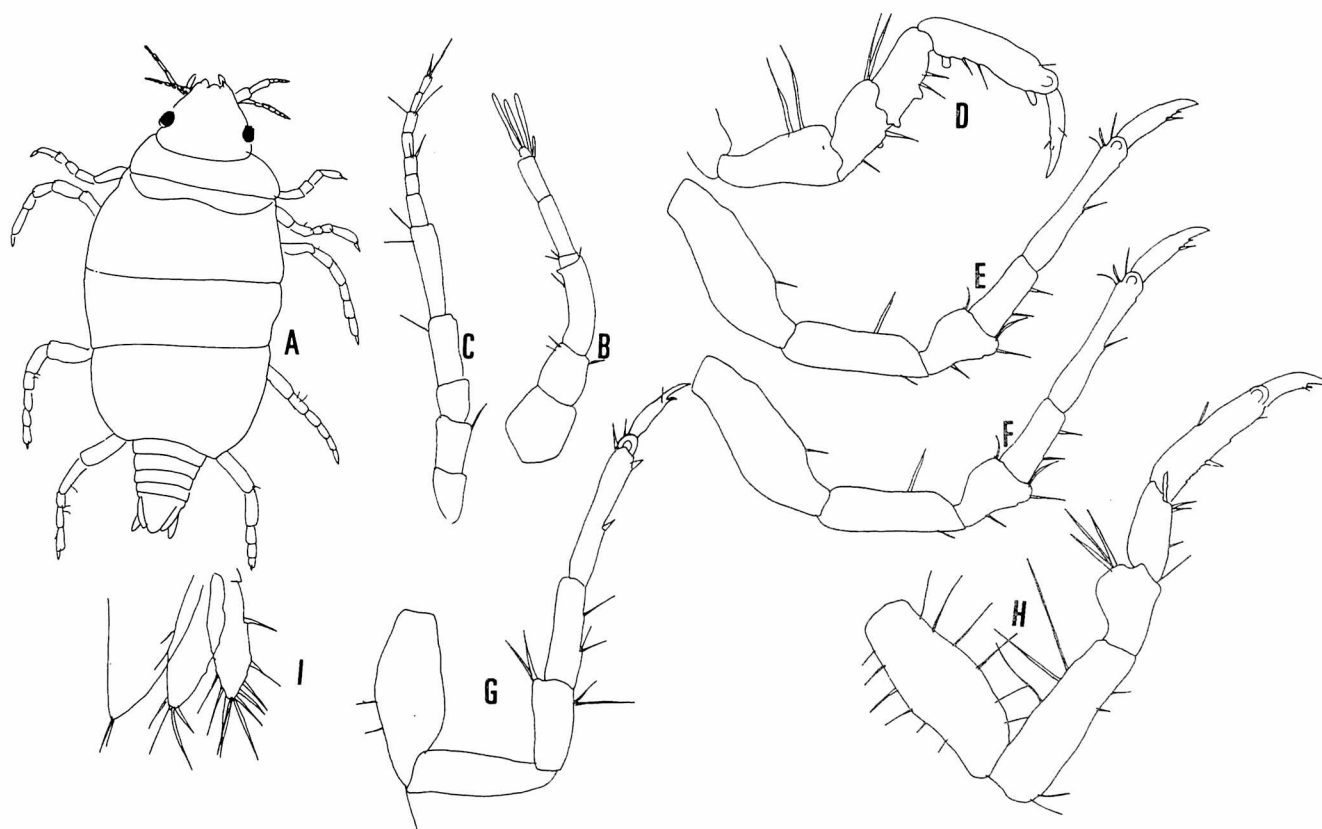


Fig.2 Female considered to be *Gnathia sanrikuensis* n. sp.

A. Dorsal view ; B. Antennule ; C. Antenna ; D-H. Pereopods 1-5 ; I. Uropod and Telson (All : Female).

on inner margin and a longer setae on outer sternal margin ; merus about half length of ischium, short with a seta at the inner distal corner and 2 setae outer distal corner ; carpus as long as merus with a stout and 3 setae on inner margin ; propodus as long as basis with 2 stout setae on inner margin and a seta at outer distal corner ; dactylus rather long.

Pereopod 3 (Fig.2F). Basis 3 times as long as wide with a seta on outer margin ; ischium  $4/5$  as long as basis, with a seta on both margins ; merus half length of ischium with 2 long setae and a stout seta on inner margin and a seta at the outer distal corner ; carpus as long as merus with 2 setae on inner margin ; propodus as long as ischium, with a seta at the middle area of inner margin and 3 setae at outer distal corner ; dactylus rather long

Pereopod 4 (Fig.2G). Basis oblong 4 times as long as with 2 setae on inner margin, and a longer seta at inner distal corner ; ischium  $2/3$  time as long as basis with a long setae at outer distal corner ; merus half length of ischium setae on inner margin ; carpus as long as merus with 2 ~ 3 long setae on inner margin ; propodus 1.4 times as long as carpus with 2 tubercles on inner margin ; dactylus .

Pereopod 5. (Fig.2H). Basis relatively stout 2.6 times as long as wide with 5 setae on inner margin and 6 long setae on outer margin ; ischium almost as long as basis with 4 ~ 5 setae on inner margin and 2 long setae on outer margin ; merus  $2/5$  as long as ischium with a long seta at inner distal corner and 4 long setae at outer distal corner ; carpus a little longer than merus with 2 ~ 3 setae inner martin ; propodus twice as long as carpus ; dactylus rather long.

Pleopod almost similar in shape.

Uropod (Fig.2I). Endopod exopod lenceolate with 6 setae around the margin ; exopod a little shorter than the endopod with 9 setae around the margin.

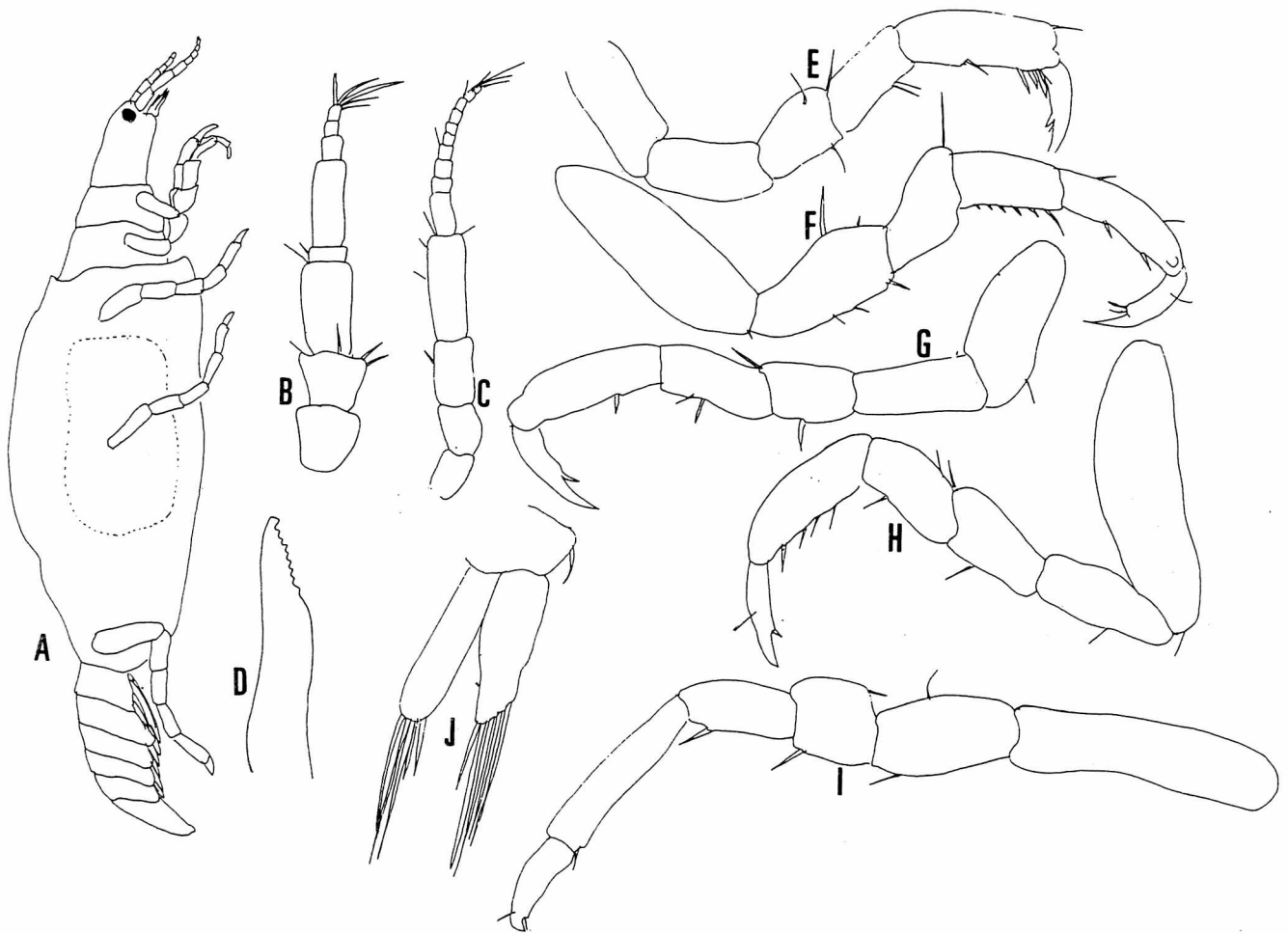


Fig.3 Praniza larva specimen considered to be *Gnathia sanrikuensis* n. sp.

A. lateral view ; B. Antennule ; C. Antenna ; D. Mandible ; F-I. Pereopods 1-5 ; J ; Uropod. (All : Praniza larva).

*Description of praniza larva collected near the type locality* : Body, slender, 4.8 times as long as wide. Color dull yellow in alcohol. Cephalon twice as wide as long. Eyes rather big and elliptical, each eye composed of about 60 ommatidia. Pleotelson Triangular

Antennule (Fig.3B), reaching the anterior part of pereon segment. Peduncle composed of 3 segments. Flagellum composed of 5 segments first segment short ; second segment long, the remaining 3 segments short, terminal segment 2 aesthetascs and 3 segments at the tip. Antenna (Fig.3C) as long as antennule. Peduncle composed of 5 segments. Flagellum composed of 7 or 8 segments.

Mandible (Fig.3D) slender, apex with 8 teeth.

Pereopod 1 (Fig.3F). Basis rectangular with a seta on margin ; ischium rectangular ; merus a little shorter than ischium, with a setae on both margins ; carpus as long as merus with 2-3 setae on inner margin ; propodus with 4 setae near the distal end on inner margin and a setae on outer distal margin ; dactylus bifid. and relatively long.

Pereopod 2 (Fig.3G). Basis oblong, 3 times as long as wide, with a seta on outer margin ; ischium 2/3 time as long as basis, with 2 setae on inner margin and a long seta on the sternal part of outer margin and a setae near the lateral part of outer margin ; merus half length of ischium with a seta on inner distal corner and a long seta at the outer distal corner ; carpus as long as merus with a long and 4 shorter setae on inner margin and on outer margin ; propodus long with 4 setae on inner margin and 2 setae on outer margin ; dactylus

bifid.

Pereopod 3. (Fig.3H) Basis rather short with a setae on outer margin ; ischium rectangular ; merus a little shorter than ischium with a seta on outer margin ; carpus as long as merus with a seta on outer margin ; propodus long with 4 setae on inner margin ; dactylus bifid.

Pereopod 4. (Fig.3I). Basis 2.6 times as long as wide, with 3-4 setae on outer margin ; ischium a little shorter than basis with 3~4 long setae on outer margin ; merus 2-5 time as long as ischium ; carpus with seta on inner margin and 3 setae at outer distal corner, one of them long ; propodus as long as ischium with 6 stout seta and 3 seta on outer margin ; dactylus bifid.

Pereopod 5. (Fig.3J). Basis long, 4.5 times as long as wide ; ischium half length of basis with a seta on both margins ; merus 3/5 time as long as wide with a seta at inner distal corner and a seta at outer distal corner ; carpus as long as wide with a seta on inner margin ; propodus long with a seta at inner distal corner ; dactylus bifid.

Pleopods 1-5 (Fig.K) similar in shape ; basis trapezoid ; both rami lanceolate with 5 setae.

Uropod. Endopod lanceolate with 10~11 setae around the margin.

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